

REMARKS

Claims 1-29 are pending in the application with claims 1-9 amended herein.

Claims 1-23 and 25-29 stand rejected as being anticipated by Fukui. Applicants request reconsideration.

Amended claim 1 sets forth a CVD apparatus that includes, among other features, a deposition chamber defined by a chamber lid and a chamber body having similar thicknesses. The chamber lid or body has an innermost surface and an outermost surface and a valve body has a seat between the innermost and outermost surfaces of the chamber lid or body. Pages 2-3 of the Office Action allege that Fukui discloses all the features of original claim 1 by equating needle valve holder 7 of Fukui with the chamber wall set forth in original claim 1. However, Applicants assert that the amendment to claim 1 distinguishes Fukui.

Amended claim 1 now sets forth that the chamber lid and body have similar thicknesses. Such a limitation is supported at least by Fig. 1 of the present specification. The CVD apparatus of claim 1 may be contrasted with needle valve holder 7 (the alleged "chamber wall") and fence 14 of Fukui. Only the top portion and other portions of fence 14 have similar thicknesses. Those of ordinary skill would not consider needle valve holder 7 to have a similar thickness to fence 14 and, thus, needle valve holder 7 cannot be considered part of the lid or chamber set forth in amended claim 1. Amended claim 1 also sets forth that the valve body has a seat between the innermost and outermost surfaces of the chamber lid or body. Fukui does not disclose any valve body having a seat between

the innermost and outermost surfaces of fence 14. Accordingly, Fukui fails to disclose every element of amended claim 1.

Amended claims 2-8 depend from claim 1 and are further not anticipated at least for such reason as well as for the additional limitations of such claims not disclosed. For example, claim 2 sets forth that the CVD apparatus comprises an ALD apparatus. Page 1, lines 15-22 and elsewhere within the present specification describe the concept of ALD. Fukui does not describe the device of Fig. 1 as being suitable for ALD. Also, those of ordinary skill viewing the teachings of Fukui would not find any motivation or suggestion to attempt using the Fukui device to perform ALD.

Amended claim 9 sets forth a CVD apparatus that includes, among other features, a deposition chamber having a single thickness lid, a process chemical opening completely through the lid, and an isolation mechanism proximate the chemical opening. The lid is integral to the isolation mechanism. Pages 2-3 of the Office Action allege that Fukui discloses all the features of original claim 9 by equating needle valve holder 7 and the top portion of fence 14 of Fukui with the lid set forth in original claim 9. However, Applicants assert that the amendment to claim 9 distinguishes Fukui.

Amended claim 9 now sets forth a single thickness lid. Such a limitation is supported at least by Fig. 1 of the present specification. The CVD apparatus of claim 9 may be contrasted with the alleged "lid" of Fukui that includes both needle valve holder 7 and the top portion of fence 14. Those of ordinary skill would not consider a lid combining needle valve holder 7 and fence 14 to have a single thickness. Thus, Fukui cannot be

considered to teach the lid set forth in amended claim 9. Accordingly, Fukui fails to disclose every element of amended claim 9.

Claims 10-14 depend from claim 9 and are further not anticipated at least for such reason as well as for the additional limitations of such claims not disclosed. For example, claim 10 sets forth that the CVD apparatus comprises an ALD apparatus. At least for the reasons discussed above regarding claim 2, Fukui cannot be considered to disclose the ALD apparatus of claim 10.

Original claim 15 sets forth a CVD apparatus that includes, among other features, a deposition chamber having a lid and a valve body including a portion of the lid as part of the valve body. The valve body selectively shuts off flow of a process chemical into the chamber, adjusts the flow rate of the chemical into the chamber, or does both. Pages 2-3 of the Office Action allege that Fukui discloses all the features of claim 15 by alleging that column 4, lines 53-59 of Fukui teach needle valve 6 shutting off flow and/or adjusting flow rate, as set forth in claim 15. However, Applicants assert that original claim 15 distinguishes Fukui.

Fukui merely states that when feedstock pressure overcomes the forcing pressure of spring 5 shown in Fig. 1 that needle valve 6 "is slid and floated up against the forcing pressure of the spring" so that feedstock flows through. Page 9, line 14 to page 15, line 8, page 11, lines 13-22, and elsewhere in the present specification discuss the concepts of shutting off flow and/or adjusting flow rate. By comparison, needle valve 6 cannot be considered to shut off flow since it opens anytime feedstock is supplied at a sufficient pressure. Those of ordinary skill would not consider needle valve 6 to be a shut off valve

since it does not affirmatively shut off flow. Also, needle valve 6 cannot be considered to adjust flow rate since the flow rate is determined by some flow control valve not shown. For a high supplied flow rate, needle valve 6 merely allows a high flow rate. For a low supplied flow rate, needle valve 6 merely allows a low flow rate. Those of ordinary skill would not consider needle valve 6 to be a flow control valve since it does not affirmatively control flow. Accordingly, Fukui fails to disclose every element of original claim 15.

Claims 16-23, 25, and 26 depend from claim 15 and are further not anticipated at least for such reason as well as for the additional limitations of such claims not disclosed. For example, claim 16 sets forth that the CVD apparatus comprises an ALD apparatus. At least for the reasons discussed above regarding claim 2, Fukui cannot be considered to disclose the ALD apparatus of claim 15. Also for example, claim 17 sets forth a limitation on flow rate as a function of stem position. Fukui does not disclose and the Office Action does not allege that Fukui discloses any such limitation. Those of ordinary skill would readily recognize that needle valve 6 likely would inherently not meet the limitation because a feedstock pressure is required to push needle valve 6 to 50% open. At 50% open, flow rate in needle valve 6 would likely be far above 50% of the maximum flow rate.

Claim 27 sets forth a CVD apparatus that includes, among other features, a deposition chamber having a lid, the lid having an inner surface inside the chamber, an outer surface outside the chamber, and an opening defined by sidewalls extending between the inner and outer surfaces. The apparatus includes a valve body having a housing and a seat. At least a part of the housing includes at least a part of the outer surface of the lid, at least a part of the opening sidewalls of the lid, or both. At least a part

of the seat includes at least a part of the inner surface of the lid, at least a part of the opening sidewalls of the lid, or both. Pages 2-3 of the Office Action allege that Fukui discloses all the features of claim 27 by equating needle valve holder 7 and the top portion of fence 14 of Fukui with the lid set forth in original claim 27. However, Applicants assert that original claim 27 distinguishes Fukui.

Applicants assert that those of ordinary skill viewing the teachings of Fukui as a whole, as is required of the Office, would not equate needle valve holder 7 with the claimed lid. Absent such a finding, the top portion of fence 14 does not disclose the subject matter of claim 27. First, Fukui does not refer to needle valve holder 7 as a lid or use any terminology for needle valve holder 7 that could be equated to the term "lid" as set forth in claim 27 and interpreted in light of the specification. Fukui does not refer to any part of ultrasonic wave sprayer 1 as a lid or use any terminology that could be equated to "lid." Second, no part of ultrasonic wave sprayer 1, including needle valve holder 7, is described by Fukui to function as a lid. Fukui does not appear to contemplate that ultrasonic wave sprayer 1 would possess any properties or position such that it might be considered to have dual functionality as more than merely an ultrasonic wave sprayer. Third, page 2 of the Office Action admits and Fukui inherently suggests that another structure, namely the top portion of fence 14, does function as a lid. In fact, that is the sole function of the top portion of fence 14. Since the top portion of fence 14 is a lid, the Fukui device does not need any other lid.

Instead of somehow suggesting a lid, Applicants assert that ultrasonic wave sprayer 1, including needle valve holder 7, is merely an independent device inserted through the

true lid (top portion of fence 14). Ultrasonic wave sprayer 1 is not somehow contemplated by Fukui to form an integral part of the lid or to satisfy the limitations of claims 1-23 and 25-27 discussed above. At least for the enumerated reasons, Fukui fails to disclose every limitation of original claim 27.


Claims 28 and 29 depend from claim 27 and are further not anticipated at least for such reason as well as for the additional limitations of such claims not disclosed. For example, claim 28 sets forth that the CVD apparatus comprises an ALD apparatus. At least for the reasons discussed above regarding claim 2, Fukui cannot be considered to disclose the ALD apparatus of claim 28.

In keeping with the remarks herein, Applicants assert that Fukui does not anticipate claims 1-23 and 25-29. Applicants request allowance of such claims in the next Office Action.

Claim 24 stands rejected as being unpatentable over Fukui in view of Waterfield. Claim 24 depends from claim 15 established herein as allowable. Applicants thus request allowance of all pending claims 1-29 in the next Office Action.

Respectfully submitted,

Dated: 18 Mar 2003

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